

Scaling Up Rural Sanitation

What Influences Open Defecation and Latrine Ownership in Rural Households?: Findings from a Global Review

Kathryn O'Connell

August 2014

The author would like to thank Jacqueline Devine for her guidance and inputs. Thanks also to Emily Christensen Rand, Susanna Smets, Jane Bevan, Eduardo Perez, and James Dumpert for their thoughtful comments and review.

WSP's Scaling Up Rural Sanitation is working with governments and the local private sector to develop the knowledge needed to scale up rural sanitation for the poor. The programmatic approach combines Community-Led Total Sanitation (CLTS), behavior change communication, and sanitation marketing to generate sanitation demand and build up the supply of sanitation products and services at scale. In addition, WSP works with local and national governments and the local private sector to strengthen the enabling environment—including institutional, regulatory, financial, service-delivery, and monitoring capacities—to achieve change that is sustainable. Starting in India, Indonesia, and Tanzania in 2006, Scaling Up Rural Sanitation is currently being implemented in more than a dozen countries. For more information, please visit www.wsp.org/scalingupsanitation.

This Working Paper is one in a series of knowledge products designed to showcase project findings, assessments, and lessons learned through WSP's Scaling Up Rural Sanitation initiatives. This paper is conceived as a work in progress to encourage the exchange of ideas about development issues. For more information please email Kathryn O'Connell at worldbankwater@worldbank.org or visit www.wsp.org.

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Executive Summary

As part of its Scaling Up Rural Sanitation and Domestic Private Sector Participation programs, the Water and Sanitation Program (WSP) of the World Bank has been commissioning formative research studies among households. These studies have informed the development of behavior change communication (BCC) and other demand-creation strategies and tools. WSP has used a conceptual framework, called SaniFOAM (Sanitation Focus, Opportunity, Ability, Motivation), to help program managers and implementers analyze sanitation behaviors to inform effective sanitation programs (Devine 2009; PSI 2004). The SaniFOAM framework has also been used to design formative surveys to understand barriers and drivers of improved sanitation and monitor progress of the effectiveness of its behavior change program (Devine 2009).

Since 2006, qualitative and quantitative market research studies have been carried out in multiple countries. To date, no systematic comparison or summary of these studies has been conducted. As such, a desk review of existing WSP formative research studies was undertaken. The purpose of the review was to identify commonalities and differences across countries, and to determine factors that affect sanitation behaviors, positively or negatively. Three specific sanitation behaviors are covered in the review: open defecation, acquisition of toilets, and improvement of latrines.

Methodology

This review collects the results from formative quantitative and qualitative research reports and presentations from eight countries: Cambodia, India (Rajasthan, Meghalaya, and Bihar), Indonesia (East Java), Kenya, Malawi, Peru, Tanzania, and Uganda. Studies were implemented from 2006 until 2012. Most of the studies were conducted only in rural areas, with a few exceptions. Secondary data were used for the review and analysis followed standard qualitative methodologies of thematic ordering and interpretation to identify factors that could positively or negatively influence the behaviors of interest.

Key Findings

The most salient factors influencing rural sanitation behaviors that emerged from the review include access to and availability of functioning latrines, sanitation products, and services; latrine product attributes (e.g., perceptions of

cleanliness and durability); social norms around open defecation; perceived latrine affordability; self-efficacy to build latrines (respondent self-efficacy versus reliance on masons); and competing priorities for other household expenditures. The review also identified a number of emotional, social, and physical drivers. These include shame and embarrassment associated with open defecation, as well as perceptions of improved social status, privacy, and convenience associated with latrine ownership and use. A number of background characteristics influence sanitation behaviors. These include socioeconomic status, as well as contextual factors that vary by region or country, such as perceptions of physical and geographical conditions (e.g., access to water and soil profile), seasonal factors, and the time of year.

Figure 1 highlights the key factors that were found to influence rural sanitation behaviors based on the SaniFOAM conceptual framework. It also includes an additional new factor in the focus section of the framework (sociodemographic and background characteristics), to demonstrate the relevance of a number of background and contextual factors that were deemed relevant to rural sanitation behaviors.

The review identified several other factors, including knowledge, enforcement of rules or regulations, values, intention to build latrines, roles and decision-making, and beliefs and attitudes. However, it is less certain how these aspects influence sanitation behaviors, thus limiting the strength of the conclusions that can be made. This may be due to the different research objectives and interview guides of the studies, quality of the data and reporting, regional differences, and/or their relevance to sanitation behaviors.

Implications

Given that this review identifies a number of factors that resonate with sanitation behaviors, there are opportunities to conduct “lighter” and more tailored formative research. Measurement of the key determinants identified in this review will serve to monitor program impact and allow for investigation of the barriers that are known to have the greatest influence on sanitation behaviors. In addition, there may be opportunities to use more specific or less burdensome research methods, such as street intercept surveys or supply-side assessments as a means to investigate pricing,

affordability, and access barriers. Supply-side surveys, which are already undertaken in most countries, would allow for an investigation into actual versus perceived affordability and accessibility barriers.

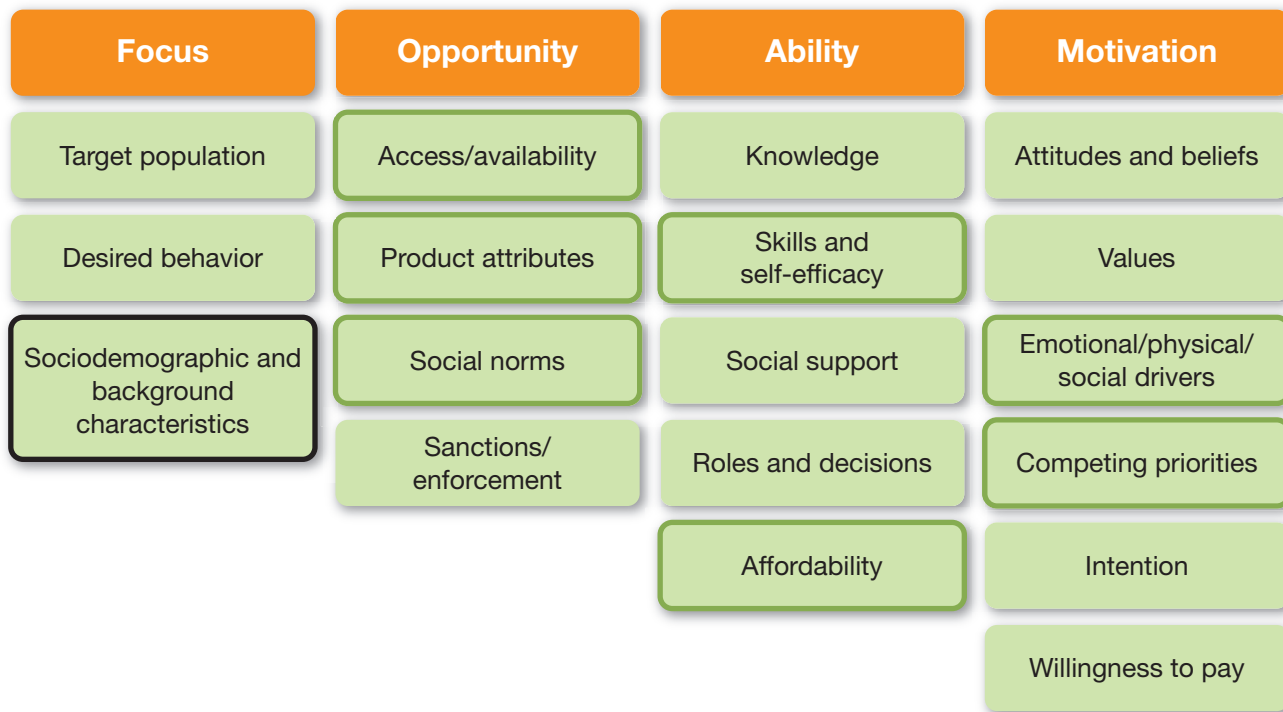
In countries or regions where new formative research studies are planned, using standardized questions to ensure greater comparability between studies and target groups will be an important methodological improvement. There are also opportunities for more specific behavioral questions to delve deeper into self-reported latrine use, which will allow for further investigation into the barriers of latrine usage among those who own latrines. For additional guidance, refer to the “Study Design and Questionnaire Tips” document, available online in WSP’s Sanitation Marketing Toolkit: <http://wsp.org/toolkit/toolkit-home>.

Given differences in coverage between wealthier and poorer households, there are opportunities to explore

the extent of this disparity through a meta-analysis of existing datasets. Understanding the specific barriers and drivers to improved sanitation among the rural poorest will help improve programmers’ ability to design effective behavior change interventions, particularly as the sector moves toward more equity-focused goals in the post-Millennium Development Goals (MDG) setting.

Practical implications from the review include changing social norms toward positive sanitation behaviors (i.e., “everyone uses a latrine”) and promoting awareness of actual latrine costs, coupled with messaging that underlines positive product attributes (improved latrines are safe, durable, and hygienic). To ensure that messaging resonates with the target audience, communication campaigns could promote a number of positive emotional, social, and physical drivers, such as improved social status and pride associated with owning a latrine.

FIGURE 1: KEY FACTORS FOUND TO INFLUENCE BEHAVIORS ACCORDING TO THE SANIFOAM CONCEPTUAL FRAMEWORK



Key:
 The most important SanifOAM factors found to influence behavior
 A new factor to emerge from the review

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I. Introduction

As part of its Scaling Up Rural Sanitation and Domestic Private Sector Participation programs, the Water and Sanitation Program (WSP) of the World Bank has been commissioning formative research studies among households. These studies have informed the development of behavior change communication (BCC) and other demand-creation strategies and tools.

WSP has utilized a conceptual framework, called SaniFOAM, to help program managers and implementers analyze sanitation behaviors to inform effective sanitation programs (Box 1). The SaniFOAM framework (Figure 2) has also been used to design the formative surveys to

understand barriers and drivers of improved sanitation and monitor progress of the effectiveness of its behavior change program (Devine 2009). Study findings inform the design of BCC, messaging, and sanitation marketing to stimulate improved sanitation behaviors.

Since 2006, qualitative and quantitative market research studies have been carried out in multiple countries, including Cambodia, India, Indonesia, Kenya, Malawi, Peru, Tanzania, and Uganda. To date, no systematic comparison or summary of these studies has been conducted. As such, a desk review of existing WSP formative research studies was conducted. The purpose of the review was to identify

BOX 1: SANIFOAM FRAMEWORK

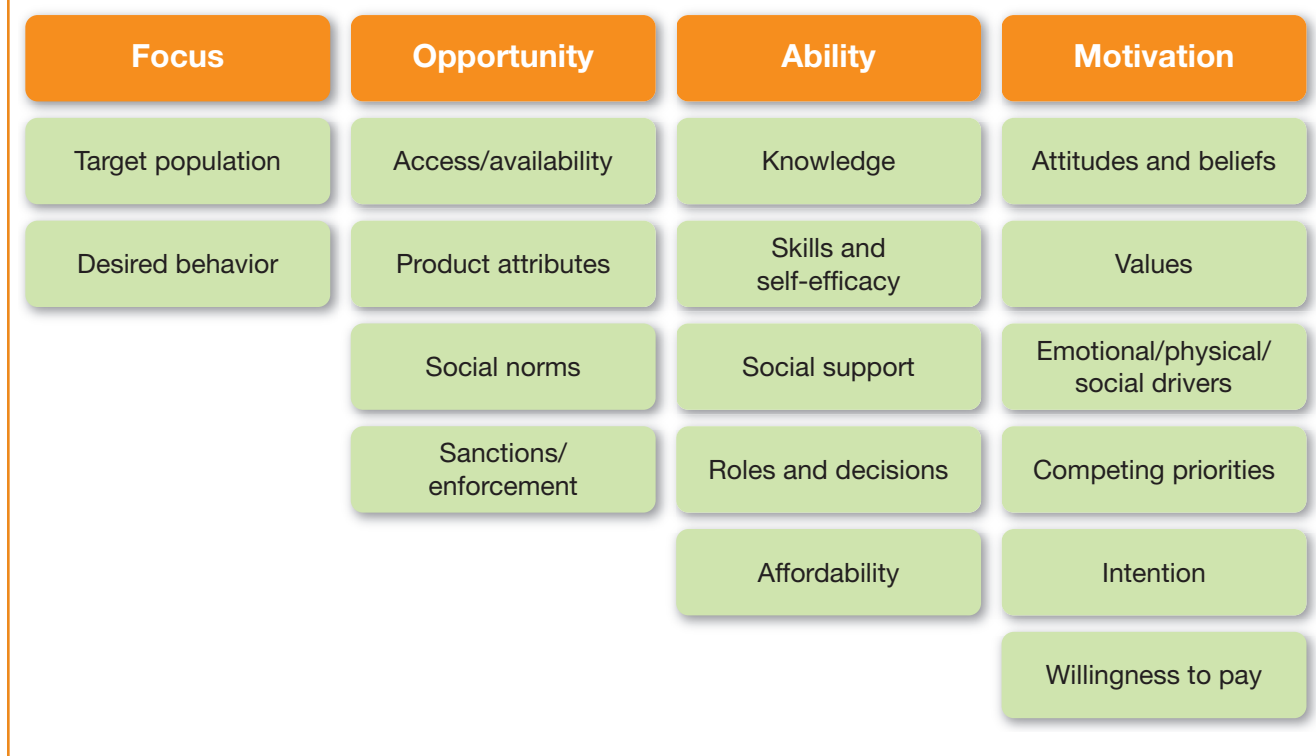
The SaniFOAM framework uses a set of behavioral determinants organized under the domains of opportunity, ability, and motivation—factors with foundations in the disciplines of consumer behavior, public health, health psychology marketing, advertising, and economics (Hallahan 2000; MacInnis et al. 1991; Moorman and Matulich 1993; Rothschild 1999; Wiggins 2004) and expands on a behavior change framework utilized by Population Services International (PSI 2004). The “focus” concept of the framework also allows for determining what behavior should be improved and whose behavior needs to be changed. Examples of the drivers or inhibitors explored in the framework include beliefs about health and hygiene, access to suppliers, perceived affordability of latrines, and awareness of sanitation options.

Opportunity encompasses institutional or structural factors that influence an individual’s chance to perform a behavior. Opportunity constructs include perceived availability of products and services, product attributes, social norms regarding health behavior, and sanctions and enforcement. *Ability* refers to individual skills or proficiencies needed to perform a

behavior, and includes health knowledge, awareness of different latrine types and price, perceived social support for latrine acquisition and use, household roles and decisions regarding major expenditures, and perceived affordability of latrines. *Motivation* is the individual’s desire to perform the promoted behavior. Motivating factors include beliefs, attitudes, and values surrounding health behaviors, as well as emotional, physical, and social drivers; competing priorities within the household; intention; and willingness to pay.

Opportunity, ability, and motivation factors are considered to have the potential to influence sanitation behaviors, including use and acquisition of latrines. In practice, the framework is flexible; program managers can test and identify the unique set of factors that best explain sanitation behaviors (such as latrine ownership or use). The framework can be utilized across different countries and with target groups (e.g., populations living in rural versus urban areas). It is theorized that targeting key factors through behavior change communication (BCC) and other marketing activities will facilitate behavior change.

FIGURE 2: SANIFOAM CONCEPTUAL FRAMEWORK



commonalities and differences across studies, and to determine factors that affect sanitation behaviors, positively or negatively. Three specific sanitation behaviors are covered in the review: open defecation, acquisition of toilets, and improvement of latrines.

1.1 Methodology

This review collects the results from formative quantitative and qualitative research reports and presentations from eight countries: Cambodia, India (Rajasthan, Meghalaya, and Bihar), Indonesia (East Java), Kenya, Malawi, Peru, Tanzania, and Uganda. Studies were conducted from 2006 until 2012. Most of the studies were conducted only in rural areas, with a few exceptions where data were also collected from semiurban areas (Kenya, Peru, and East Java) and urban areas (Cambodia). Table A in the appendix lists the details of these studies.

The studies reviewed used a variety of methods, including focus group discussions, in-depth interviews, and structured

interviews using questionnaires. The study population varied according to the research method and study objectives, but generally included open defecators, latrine owners, and owners of improved latrines. In the quantitative surveys, most of the respondents interviewed included male household heads. In the qualitative studies, the inclusion of female respondents was more common. Questionnaire guidelines also varied by study and were not standardized to allow for direct cross-regional comparisons. In some instances, interviews with suppliers were conducted, but this information is excluded from the review, as a separate desktop review of supply-chain studies is planned. Results were sometimes reported according to the SaniFOAM framework, although in some countries (Cambodia, Malawi, Peru, Tanzania, and Uganda) the framework was not used as a means to structure the reports.

The review followed standard qualitative methodologies of thematic ordering and interpretation to identify factors that could positively or negatively influence the behaviors of

interest. Secondary data rather than primary data were used for the review. To conduct the analysis, a deductive list of codes based on the SaniFOAM framework was used as a general guide for the analytic approach. Each report was first read to investigate content and findings. Reports were then coded using the broad SaniFOAM codes. After the preliminary coding, themes were reviewed again and arranged into a smaller set of themes to capture the emergence of any subthemes.

The frequency with which the themes were mentioned in each report was noted in the analysis plan. This procedure helped clarify which themes emerged consistently across all countries/regions for the different behaviors and which were idiosyncratic and specific to a country/region or report. Comparisons were made across the different types of behaviors. Findings were verified as far as possible with tabulated data in the reports or quotes in the case of qualitative research.

Despite a number of commonalities that emerged from the analysis, there were some notable challenges given the variability in study objectives and the extent to which all find-

ings were routinely presented in the reports. These limitations are summarized in Box 2.

1.2 Current Rates of Latrine Ownership and Defecation Behavior

To contextualize the findings of this review, defecation practices and latrine ownership in 2011 are presented using recent Joint Monitoring Program (JMP) prevalence figures as shown in Table 1 (WHO/UNICEF 2013).

TABLE 1: ESTIMATES OF USE OF SANITATION FACILITIES IN RURAL AREAS IN 2011 AS REPORTED BY THE WHO/UNICEF JOINT MONITORING PROGRAM (%)

	Improved Latrine Ownership	Shared Latrine	Unimproved Latrine Ownership	Open Defecation
Malawi	53	31	9	7
Uganda	35	16	39	10
Tanzania	7	4	73	16
Kenya	29	19	35	17
Indonesia	44	11	10	35
India	24	4	6	66
Cambodia	22	5	4	69

BOX 2: STUDY LIMITATIONS

- Different survey methodologies and study instruments were used in the formative research studies, making comparison between countries more challenging.
- Some research topics were explored in detail in some studies and not covered in others.
- The definition of ownership of different latrine types varied by study. For example, in East Java, respondents were categorized as improved or unimproved latrine owners, sharers, or open defecators; whereas in Cambodia, respondents were classified by latrine ownership versus no ownership.
- The review is based on summary reports, not the original data. Hence, findings have been filtered and interpreted by the authors of the reports. In particular, qualitative research has been translated, which may have led to lost insight or bias.
- Tables of frequencies or means were commonly presented in reports, but statistical comparisons between target groups were rarer.
- Although many of the surveys used Likert scales to address attitudes toward different concepts, the data were not analyzed in a consistent manner, making interpretations more challenging.
- Not all of the studies used the SaniFOAM framework as a means to structure the survey questionnaires or present findings. Some of the reports retrofitted results to the framework, given that the studies predated the SaniFOAM framework.

II. Key Findings

Findings presented in this report illustrate themes that were consistently found across regions/countries. The most salient factors influencing rural sanitation behaviors that emerged from the review include access to and availability of functioning latrines, sanitation products, and services; latrine product attributes (e.g., perceptions of cleanliness and durability); social norms around open defecation; perceptions of latrine affordability; self-efficacy to build latrines; and competing priorities for other household items. The review also identified a number of emotional, social, and physical drivers. These include shame and embarrassment associated with open defecation, as well as perceptions

of improved social status, privacy, and convenience associated with latrine ownership and use. A number of background characteristics influence sanitation behaviors. These include socioeconomic status, as well as factors that vary by region or country, such as temporal and seasonal factors (such as the time of year), land ownership and access, and perceptions of physical and geographical conditions (e.g., access to water and soil profile). The following sections discuss these findings in detail according to the SaniFOAM opportunity, ability, and motivation factors, as well as sociodemographic and other background characteristics.

III. Opportunity

Opportunity factors include institutional or structural aspects that influence whether an individual has the chance to engage in the desired behavior. A summary of the key opportunity factors that were found to influence behaviors is presented in Figure 3.

3.1 Access and Availability

Access and availability is the extent to which the promoted product or service can be found, or is perceived to be available, by target groups (e.g., Conteh and Hanson 2003). Access to, and availability of, latrines, products, and services (such as masons to install latrines or shops selling sanitary hardware) may influence whether or not latrines are purchased or upgrades are made. This review focused on perceived availability as a potential driver for positive sanitation behaviors.

Different dimensions of availability and access are found to be relevant among latrine owners and open defecators.

3.1.1 Access to Latrines

Variance in latrine ownership by country or region is important to note when exploring reasons for open defecation. According to the JMP findings, latrine ownership (of any type) ranges from as little as 31 percent of households in Cambodia to 93 percent in Malawi. If an individual does not have access to a latrine at work, or in the homestead, open defecation is the usual alternative. For example, in Cambodia, latrines are described as being far away and only found in towns, pagodas, or schools:

When farmers are in the field or when they go far from their villages they have no option other than using open fields.

Findings also demonstrate that owning a latrine, or having access to a latrine, does not ensure that it is used or used consistently by household members. For example, among households with latrines, 18 percent of respondents in East Java reported defecating in the open, and in Kenya, 89 percent of adults and only 66 percent of children consistently use latrines.

3.1.2 Functioning Latrines

Access to a functioning latrine is an important issue to address when unpacking reasons for open defecation. Defining a household (or individual) as owning a latrine does not ensure access to a working latrine. Latrines are commonly described as being full, overflowing, in need of repair, or infested with maggots, posing a barrier to use. Thus, “owning” a latrine is not necessarily a precursor to using the latrine. Example findings include:

- In Tanzania, 20 percent of latrine owners stated that there was a period in the last year when their latrine was not usable.
- Observations in Bihar show that 11 percent of latrines were not functioning on the day of survey.

Thus, assurances are needed to determine latrine functionality.

3.1.3 Perceived Supply-Side Access: Availability of Latrine Materials, Hardware, Suppliers, and Masons

Knowing a supplier who stocks a variety of sanitation hardware and a mason to assist with latrine construction are central to upgrading and improving latrines. Often these factors serve as a barrier to moving up the sanitation ladder, given that materials for improved latrines are perceived as unavailable and costly. For example, in Bihar, two thirds of households that own latrines report that good-quality construction materials are not available.

Knowing a mason to assist with latrine construction is important in contexts where labor is relied upon to build latrines, landscape is challenging, deeper pits are required, or improved latrines/upgrades are desirable. In some countries/regions, up to 90 percent of households report using masons to construct latrines. The importance of knowing where to find a supplier may be a determinant of latrine ownership and upgrades. However, perceived availability of masons varies by study. For example,

- Perceived availability of suppliers or masons ranges from 34 percent of latrine owners and 46 percent of improved latrine owners in Meghalaya, 73 percent of

households in Rajasthan, 80 percent of households in Bihar, and 85 percent of households in Tanzania.

- In Meghalaya, the second most common barrier to making latrine improvements is noted as “difficulty in finding a mason” (cited by 23 percent of households).

Although perceived availability of masons may be an important issue to address, these are not the only sanitation suppliers that can provide latrines and make upgrades.

3.2 Product Attributes

Sanitation products and services must not only be available and readily accessible, they must also have the level of quality and other positive attributes sought by the target populations. Product attributes are the subjective perceptions about the physical components of the latrine and perceptions of the practical use of the product (e.g., Berkowitz et al. 2000; Rogers 2003).

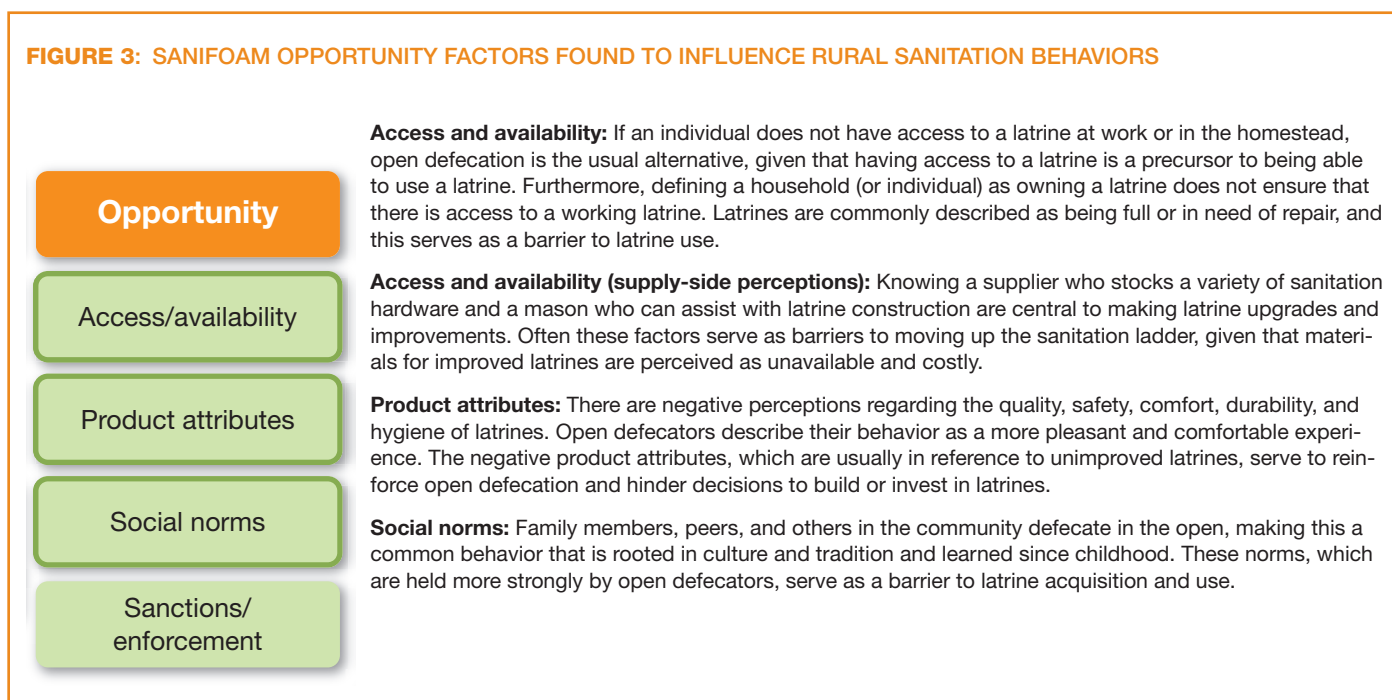
The review found negative perceptions regarding the quality, safety, comfort, and hygiene of latrines that reinforce open defecation and hinder decisions to build or invest in latrines.

In general, most of the negative latrine attributes are in reference to unimproved latrines. Latrines are perceived as having low durability, requiring frequent maintenance and constant relocation. They overflow, collapse, and/or become full, and are perceived as unsustainable. Latrines are also perceived as unsafe and risky. There is fear that people, especially children, will fall into the pit or the ground will cave in, causing the user to sink into the defecation site. There is also the perception that latrines are unhygienic, difficult to clean, and emanate bad smells. For example, in Meghalaya, 56 percent of households believe that a key disadvantage of using a latrine is the malodor. Given these negative perceptions regarding latrines, open defecators describe their behavior as a more pleasant and comfortable experience. Example qualitative quotes from in-depth interviews are:

The logs can rot, and within three to four years it sinks. For example what happened here recently, a woman sunk inside a latrine with a collapsing floor, the thing was so weak and she sunk inside. People went and rescued her. — Uganda

If I defecate in the river, I feel more comfortable. I don't have to smell my own waste—unlike when I'm doing it in a (closed) latrine. — East Java

FIGURE 3: SANIFOAM OPPORTUNITY FACTORS FOUND TO INFLUENCE RURAL SANITATION BEHAVIORS



Building a basic latrine each year is so much work. We had to collect grass, wood, and then dig the pit. And I had to cook for the men and collect water. It was hard work but now we have a good latrine and I don't have to worry about any of that. — Malawi

Increasing awareness around the durability of an improved latrine may be an important communication message. Box 3 lists the qualities of an ideal latrine, such as durability, along with other important attributes.

3.3 Social Norms

Social norms are the rules that govern how individuals in a group or society behave. According to the SaniFOAM

framework, social norms include behavioral standards that exist in the community for an individual to follow, and are the presence or absence of traditions and cultures that govern behavior (Andersen 1995; Fehr and Gaechter 2000; Bettenhausen and Murnighan 1991).¹

Family members, peers, and others in the community defecate in the open, making this a common behavior that is rooted in culture and tradition and learned since childhood. In Peru, open defecation is described as “the

¹ It is, however, noted that there are various definitions of social norms and the precise definition of a social norm varies (for examples of definitions, see Elster 1989, Bettenhausen and Murnighan 1991, Fehr and Schmidt 1999, Lindbeck et al. 1999, and Bicchieri 2000).

BOX 3: PRODUCT ATTRIBUTES: WHAT DO HOUSEHOLDS CONSIDER AN IDEAL LATRINE?

Attributes of an ideal latrine include:

- durability
- privacy
- cleanliness and being easy to clean
- convenience
- affordability
- ease of construction

For example, “privacy” is cited as an ideal attribute by 46 percent of households in Bihar, 67 percent in Rajasthan, and 80 percent in Meghalaya. Cleanliness is cited as the most important attribute in Kenya.

The photos below show examples of improved latrines with slabs in Tanzania, which have many attributes of an ideal latrine. *Photo credit: Water and Sanitation Program, World Bank.*



most natural thing.” In East Java, a focus group participant noted,

Yeah, I am embarrassed if people pass by, but I think everybody is used to it, everybody also does that.

And in Kenya, a participant described,

Some people may have a toilet, but are not used to going to the toilet. It depends with how a person was brought up. If he is used to go to the bush, he will still go to the bush.

Open defecation is described as traditional, habitual, and part of one’s daily routine, and these social norms are also held more strongly by open defecators. For example,

- In Tanzania, 40 percent of all survey respondents agree or strongly agree that “it is normal for people

to defecate in the open in their community.” In one area surveyed, as many as 80 percent of respondents agreed or strongly agreed with this statement.

- In Rajasthan, 28 percent of open defecators state this behavior is “practiced by generations” and 47 percent agree “we are used to defecating in the open.”
- In Bihar, 49 percent of open defecators agree “we are used to defecating in the open.”

In certain circumstances (such as when traveling) or for certain target groups (such as children), the practice of open defecation is deemed more acceptable. Specific cultural norms may also further influence open defecation, such as the belief that females and male in-laws should not share the same latrine facilities, or in contexts where men are not meant to be seen going to a toilet.

IV. Ability

Ability is an individual's skills or proficiencies needed to engage in a certain sanitation behavior. Key ability factors that were found to influence behavior include skills and self-efficacy to build latrines and perceived affordability. These are summarized in Figure 4.

4.1 Skills and Self-efficacy

Self-efficacy is an individual's belief that he or she can perform a promoted behavior effectively or successfully (e.g., Bandura 1977; Becker 1990). Some households may build their latrine themselves rather than hire a mason to do it. For these self-builders, the knowledge needed to go about this is referred to as skills.

The extent to which masons are relied upon to build latrines varies by country/region, and by the type of latrine or structure being built (see Figure 5). Unimproved latrine owners typically believe they can build a basic pit latrine and have the skills and tools necessary to do this. However, self-efficacy to build an improved latrine is lower and reliance on masons is higher. One in three households in Tanzania

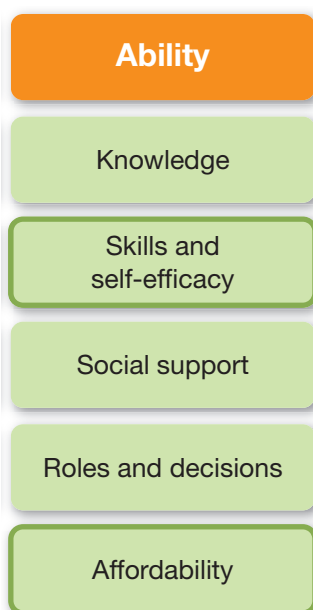
do not know how to build an improved latrine. Other research shows that in East Java, 63 percent of latrine-owning households report that it is "easy" to build a new latrine and attribute this to the availability of masons and materials. In Peru, it is noted that suppliers are not always available to build latrines, and this serves as a barrier to latrine acquisition.

As such, knowing a mason to assist with latrine construction will be important in contexts where labor is relied upon, such as when the landscape is challenging, deeper pits are required, or improved latrines/upgrades are desirable. Knowing where to find a mason or services/supplier is an important driver for making latrine upgrades, but is less important for building a simple pit latrine.

4.2 Affordability

Affordability in the context of SaniFOAM is one's ability to pay for a sanitation product or service or to engage in a sanitation behavior (e.g., Foreit and Foreit 2000). Affordability can be influenced by many factors, including

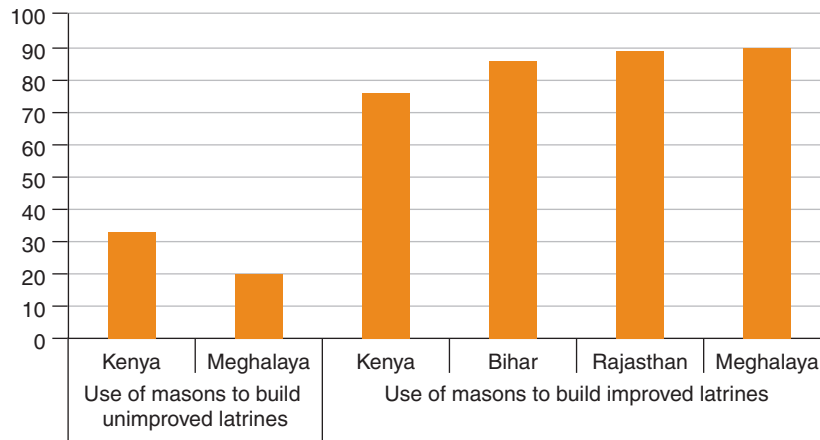
FIGURE 4: SANIFOAM ABILITY FACTORS FOUND TO INFLUENCE RURAL SANITATION BEHAVIORS



Skills and self-efficacy: Unimproved latrine owners typically believe they can build a basic pit latrine and that they have the skills and tools necessary to do this. However, self-efficacy to build an improved latrine is lower and reliance on masons is higher. Knowing where to find a skilled mason is an important factor for making latrine upgrades, but is less important for building a simple pit latrine.

Affordability: Both open defecators and latrine owners consistently mentioned cost as a barrier to building and upgrading facilities. Open defecators overestimate the cost of latrines contributing to a perceived unaffordability. Latrines are perceived as expensive to construct, especially when associated with cement or deeper pits. Latrines are also perceived to be more expensive in certain seasons, such as during the rainy season when construction is perceived as more challenging, due to flooding. There are also challenges accessing credit or loans to pay for latrines, which serve as a barrier to acquisition and upgrades.

FIGURE 5: USE OF MASONS TO BUILD UNIMPROVED OR IMPROVED LATRINES, BY STUDY (%)



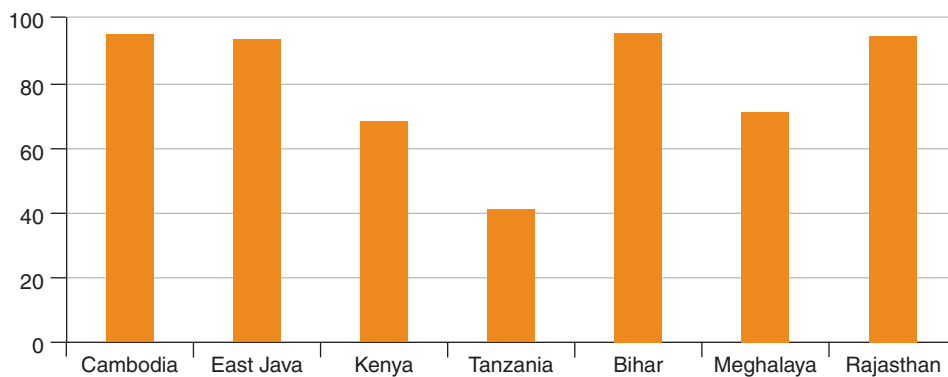
Note: Graphs in this report are for illustrative purposes. Survey questions, target groups, and denominators may vary according to study.

household income, availability of cash, time of year, access to credit, and availability of suitably priced sanitation options in the area. Affordability can be real or perceived. In the latter case, knowledge of the true costs of a latrine may be an associated factor.

Assessments of wealth are estimated across all reports and indicate that those without latrines tend to be poorer than those higher on the sanitation ladder. However, both open defecators and latrine owners consistently mentioned cost as a barrier to building and upgrading facilities (see Figure 6).

Open defecators cite lack of finances, insufficient funds, “too expensive,” or “don’t have money” as key barriers to building latrines or making improvements. Latrines are perceived as expensive to construct, especially when associated with cement or deeper pits. Latrines are also perceived to be more expensive to build in certain seasons, such as during the rainy seasons when construction is perceived as more challenging, due to flooding. There are also challenges of accessing credit or loans to pay for latrines. For example, in Tanzania, 43 percent of non-latrine owners from the poorest wealth quintile cite “inability to save” or “lack of access

FIGURE 6: OPEN DEFECATORS CITING COST OR AFFORDABILITY AS A KEY BARRIER TO BUILDING LATRINES OR MAKING IMPROVEMENTS (%)



Note: Graphs in this report are for illustrative purposes. Survey questions, target groups, and denominators may vary according to study.

BOX 4: DO HOUSEHOLDS HAVE ACCURATE PRICE PERCEPTIONS OF LATRINES?

The perception of the price of a latrine varies because open defecators have, in some cases, never owned, built, or even used a latrine, and owners of unimproved latrines have little experience with upgrading their facilities, although they might have looked at options for latrine upgrades. Notably, open defecators perceive latrines as much more expensive than do households that own latrines, but may own household items that cost as much as a latrine. For example, in Kenya, 90 percent of households own a radio, which costs approximately the same as building a latrine (WSP et al. 2013, 2).

Generally, people are unaware of a range of affordable latrine options. Ensuring that households have accurate perceptions of costs associated with latrine purchases and upgrades may help to address the perceived affordability barrier.

to credit” as a main impediment to building a latrine or carrying out improvements. For open defecators, the perceived cost of a latrine may be so high that latrine acquisition is inconceivable (see Box 4). For example, a focus group member in Kenya stated,

“This year I have no money to spend on anything but food. It rained too much last year and our cassava crop has failed.”

For unimproved latrine owners, the high cost of materials and labor, coupled with lack of savings and access to credit, prevents improvements from being made. Given that pit latrines are notably lacking in durability, there is also need for repeated financial investments just to maintain or rebuild them.

Improved latrines are deemed expensive to install. Given available income, which also varies by time of year, access to extra resources to build a latrine is a challenge. Constraints are further exacerbated by the lack of formal credit mechanisms for home improvements. These financial constraints are also associated with competing priorities (see “Competing Priorities,” Section 5.2).

In summary, affordability barriers are linked with levels and fluctuation of income, lack of savings, lack of financing and limited credit options for home improvement, and actual versus perceived costs of building a latrine.

V. Motivation

For a behavior to take place, an individual must be motivated to engage in it. Motivation refers to an individual's desire to perform a promoted behavior. Emotional, physical, and social drivers and competing priorities were found to influence the behavior of interest. Key motivational findings are summarized in Figure 7.

5.1 Emotional, Social, and Physical Drivers

Drivers are strong internal thoughts and feelings that motivate behavior (e.g., Cole et al. 1993; Catania et al. 1990). They can be positive or negative, and can stem from unmet physical, emotional, or psychological needs. Such drivers have been identified through research in several countries as motivators to engage in the adoption of positive sanitation behaviors. The review found a number of relevant components: comfort, privacy, shame and embarrassment, social status, prestige, and honor.

5.1.1 Comfort

Having one's own latrine avoids exposure to the elements. Being able to use a latrine is described as "more

comfortable," because it prevents individuals from getting scratched, stepping on thorns, or dirtying their clothes. Although comfort was mentioned as a positive attribute across a number of countries, it was most notably important in Cambodia, where 66 percent of latrine owners cite comfort as a key advantage of owning a latrine.

5.1.2 Privacy

Privacy emerged as a motivator among latrine owners and open defecators to move up the sanitation ladder. It is important for people, especially women, to avoid being seen exposing body parts. Improved privacy is a key reason for latrine construction for around 45 percent of latrine owners in Bihar, Kenya, and Cambodia; 56 percent in Rajasthan; and up to 90 percent in Meghalaya. This is also confirmed by qualitative research, as illustrated by the following quote from a latrine owner in East Java:

We have to protect our body. If we have our own toilet, we can protect our body parts, so nobody else can see them.

FIGURE 7: SANIFOAM MOTIVATIONAL FACTORS FOUND TO INFLUENCE RURAL SANITATION BEHAVIORS

Motivation

Attitudes and beliefs

Values

Emotional/physical/
social drivers

Competing priorities

Intention

Willingness to pay

Drivers: Privacy, comfort, and improved social status emerged as key motivators to move up the sanitation ladder among the different behavioral groups, and were cited as common reasons for latrine acquisition. Improved social status was a particularly important driver to motivate open defecators to acquire latrines.

Embarrassment, shame, and humiliation also motivate individuals to use latrines. Although open defecation is noted as a common practice, this behavior may be a source of embarrassment, particularly for those who may have used facilities or own latrines that are no longer functional, and thus serves as a motivator for latrine use.

Competing priorities: Latrines are viewed as a household improvement, but one that has lower priority in terms of family expenditure. School fees, food, transport, and healthcare are priorities for those with limited savings. Building, repairing, or improving a latrine are only considered if and when additional resources are available, and even then, other competing demands have priority.

Although this factor is particularly important for women, it also resonates with men who want to protect a woman's honor and dignity, as illustrated by this unimproved latrine owner from East Java:

My wife never goes to the river; she is not used to it. She feels embarrassed and uncomfortable. So I thought I'd better build my own toilet.

5.1.3 Embarrassment, Shame, and Humiliation

Notions of embarrassment, shame, and humiliation motivate latrine owners and open defecators to move up the sanitation ladder. Although it is noted as commonly practiced, open defecation is still a source of embarrassment, particularly for those who may have used facilities or own latrines that are no longer functional. Adjectives used to describe open defecation include “shy,” “shameful,” “uncomfortable,” and “embarrassing.” For example, in Kenya 42 percent of households felt embarrassed when their latrine was out of use. In Peru, persons living in households without latrines report feeling embarrassed to receive visitors. In Rajasthan and Bihar, the number one reason women are motivated to build a latrine includes notions of “feeling embarrassed to be seen uncovered” (66 and 56 percent, respectively).

The notion of shame and humiliation is also prevalent, and serves to promote latrine use and ownership. In Tanzania, for example, 42 percent of people who report openly defecating because of collapsed latrines feel ashamed. In Kenya, 89 percent of households agree that people in the community would feel ashamed if they did not have a latrine, and 37 percent of latrine owners report feeling ashamed when their latrine was out of use. Women in particular feel a sense of humiliation, as illustrated by this female open defecator from Meghalaya:

We want to have a latrine for we face no more shame. It is difficult to live like this. We will try to build latrine using the available materials.

5.1.4 Social Status, Prestige, and Honor

Owning a latrine can positively influence one's social status, as owners are described as prestigious, well respected, and looked upon favorably by others. In East Java, for example,

improved latrine owners are more likely than those with unimproved latrines to agree that having a latrine raises the family's status in the community. In Rajasthan and Bihar, honor is the third most important reason for constructing latrines, as reported by 35 and 45 percent of male latrine owners. Improved status and prestige is also mentioned as a key motivating factor for owning a latrine by 24 percent of Cambodians.

As reflected in the following statements, the notion of prestige and pride is also important:

Now it is very easy for me to ease myself. Secondly when visitors come I feel very comfortable and not scared. If you do not have a latrine and a visitor comes you will be very embarrassed and look very small. So you feel very comfortable and you feel that you are a man at home. Even outside there you walk like other men walk. — Uganda

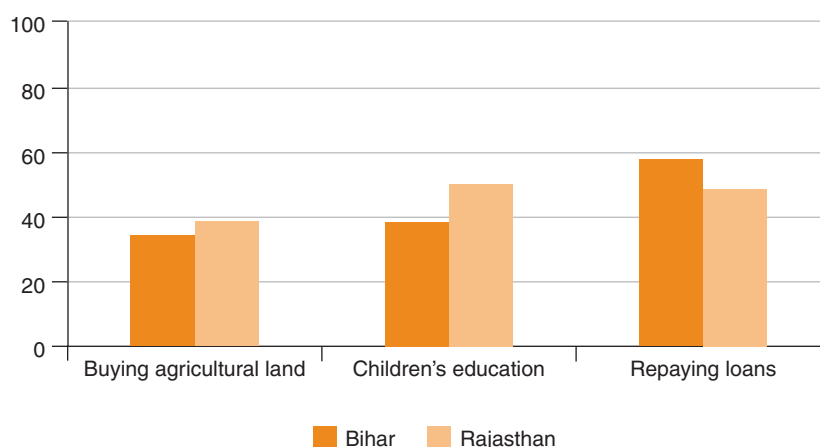
I feel proud because I have a well-maintained and clean toilet. — Malawi

5.2 Competing Priorities

Households and individuals face many competing demands when it comes to spending. The lower the income, the more competing demands may influence behavior. Financial demands can be for day-to-day necessities, occasional or periodic expenses, or urgent or discretionary expenditures. Households with strong financial pressures will often place a lower priority on sanitation and be less motivated to acquire a facility (e.g., Jenkins and Scott 2007).

Latrines are viewed as a household improvement, but one that has lower priority in terms of family expenditures. School fees, food, transport, and healthcare are a priority for those with limited savings. Building, repairing, or improving a latrine are only considered if and when additional resources are available, and even then, other competing demands have priority (see Figure 8). For example, in East Java, when households have extra money, the primary priority is to pay debt, followed by purchasing items that can be sold later (such as livestock or gold), and then purchasing luxury items (namely, electronics such as TVs or refrigerators), which provide entertainment and improve the family status.

FIGURE 8: COMMON USES OF EXTRA MONEY IN BIHAR AND RAJASTHAN (%)



Note: Graphs in this report are for illustrative purposes. Survey questions, target groups, and denominators may vary according to study.

In Tanzania, 43 percent of respondents agree that people in their community would rather buy animals than build a latrine, and 50 percent would rather buy a phone than a latrine. In Cambodia, the second most common reason for not owning a latrine is “other priorities come first.” Least prioritized include home renovations, such as latrine acquisition, and this is noted as occurring in stages because of lack of money.

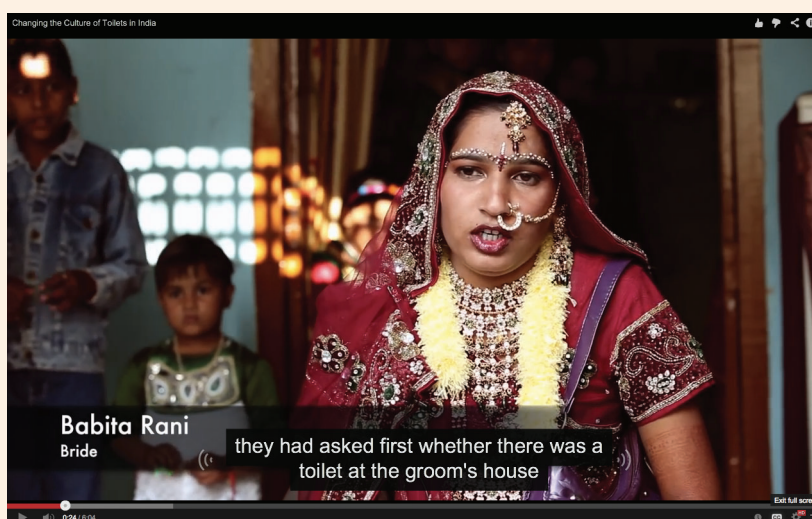
However, although open defecators have fewer assets than their latrine-owning counterparts, a significant proportion of non-latrine owners prioritize ownership of other assets (e.g.,

televisions, bicycles, and radios) over a latrine. Latrines are also not considered a “good” or “wise” investment, such as buying additional livestock or land, which is viewed as profitable in the longer term. Rather, a (unimproved) latrine is viewed as an asset that needs future investment for maintenance, repairs, and possible reconstruction and/or is noted as a household item that does not generate any revenue. However, in Peru, for example, although improved latrines may be more expensive than unimproved latrines, in the long run the overall costs are reduced given there is less need for reinvestment, maintenance, and repairs associated with improved latrines.

BOX 5: THE ROLE OF IMPORTANT FAMILY EVENTS AS A MEANS TO RAISE LATRINE PRIORITY

Events such as a wedding, welcoming guests, and in-laws joining families may raise the priority of a home latrine above other demands on household resources. For example, in Bihar, latrine owners are more likely to agree that latrines are constructed when visiting children refuse to defecate in the open. Other events include sudden sickness, hosting an important social gathering, or an extended visit from a relative from the city or abroad. It may be that these events raise priority of latrines above other household demands and serve to promote a move up the sanitation ladder.

As this screenshot from a 2013 World Bank video illustrates, an increasing number of brides in India are demanding the groom provide a household latrine before agreeing to marry.



“Changing the Culture of Toilets in India” available on The World Bank’s YouTube channel: <http://www.youtube.com/watch?v=liBPxiphFOU>

VI. Socioeconomic Status and Other Contextual Factors

6.1 Socioeconomic Status

A clear finding to emerge from the review was the relationship between household wealth and latrine ownership. There is a positive relationship between a household's socioeconomic status and its position on the sanitation ladder. Improved latrine owners are wealthier than unimproved latrine owners or open defecators, are more educated, and have higher literacy rates, which is consistent with findings from the JMP. For example, in Rajasthan, respondents from highest quintiles are more likely to own latrines than those in the lowest quintiles. In contrast, those from the lowest socioeconomic quintiles are most likely to defecate in the open.

6.2 Contextual Factors

Other contextual factors, such as the time of year and seasonal factors, land ownership, and household members' perceptions of the physical and geographical conditions (such as access to water and soil profile) were found to influence behaviors. Although these factors coalesced around common themes, findings varied by country and region, given variations in climate and geography (see Box 6 for additional examples). Although these components are not necessarily changeable through behavior change interventions, these sociodemographic and environmental characteristics are important because they serve as facilitators or deterrents for positive sanitation behaviors. This information is also valuable to situate some of the challenges when aiming to promote better practices.

BOX 6: EXAMPLES OF CONTEXTUAL FACTORS INFLUENCING LATRINE OWNERSHIP AND OPEN DEFECATION

Temporal and Seasonal Factors

Open defecation may be more frequent during certain times of the year:

- At night, in cases where latrines are located further from the household and security is a concern or to allow for more privacy.
- During work or when travelling, when access to latrines is limited, and where paddy fields are noted as a place for open defecation.

Open defecation or latrine acquisition may vary by season, as seen in these examples:

- In Sub-Saharan Africa countries, open defecation is more commonly practiced during the rainy season, as latrines are cited as overfull, washed away, or collapsed. Heavy rains prevent latrines from being built, rebuilt, or repaired.
- During the dry season in East Java, rivers dry up and no longer provide an option to allow feces to float away, so alternatives to open defecation are sought.

Land Access and Tenure

Sufficient access to land and space to build latrines is noted as an important driver. In situations where latrines are overfull or have collapsed, it is impracticable or impossible to construct another latrine given insufficient land space. Some examples include:

- In Meghalaya and East Java, 22 percent of open defecators report that they lack space to build a latrine.
- In East Java, many report insufficient land to make improvements, such as space for a septic tank.

Not owning one's house or land can also act as a disincentive to construct a latrine, as mentioned by open defecators:

- Meghalaya (16 percent)
- Bihar (15 percent)

Soil Profile

Soil profiles, such as rocky or steep landscapes, pose a challenge to building latrines, as most commonly noted in East African countries and East Java. In some instances, water is too close to the surface, making it impossible to dig sufficiently deep pits. In cases where latrines have collapsed or are no longer functioning, households often report that they do not have the ability to rebuild latrines, due to flooding of land and soil quality, as illustrated by this participant from an in-depth interview:

In this center we have one problem. We cannot dig pits because of the rocks we have here. You can only dig up to four feet and then you reach the rocks. If you don't plan properly here you cannot dig a pit of 25 feet.

— Uganda

Access to Water Sources

A sufficient water supply for flushing away waste and latrine cleaning is seen as an integral part of the latrine decision-making process, and will also influence the type of latrine built. Scarce water supply, along with the perception that latrines consume a lot of water, can pose a barrier to building a latrine and prevent usage. For example, in Rajasthan, one in four households cited lack of water as a reason for open defecation. In contrast, in some areas where water supply is not an issue, having a river or water stream nearby is seen as an easy and inexpensive means to dispose of waste, such as in East Java (upper photo) and Peru (lower photo). *Photo credit: Water and Sanitation Program, World Bank*



VII. Other Findings

The review identified several other factors, including knowledge, enforcement of rules or regulations, values, roles and decision-making, and beliefs and attitudes. However, it is less certain how these aspects influence sanitation behaviors, thus limiting the strength of the conclusions that can be made. This may be due to the different research objectives and interview guides of the studies, quality of the data and reporting, regional differences, and/or their actual relevance to sanitation behaviors. Some examples are provided in this section to further illustrate the challenges in drawing conclusions.

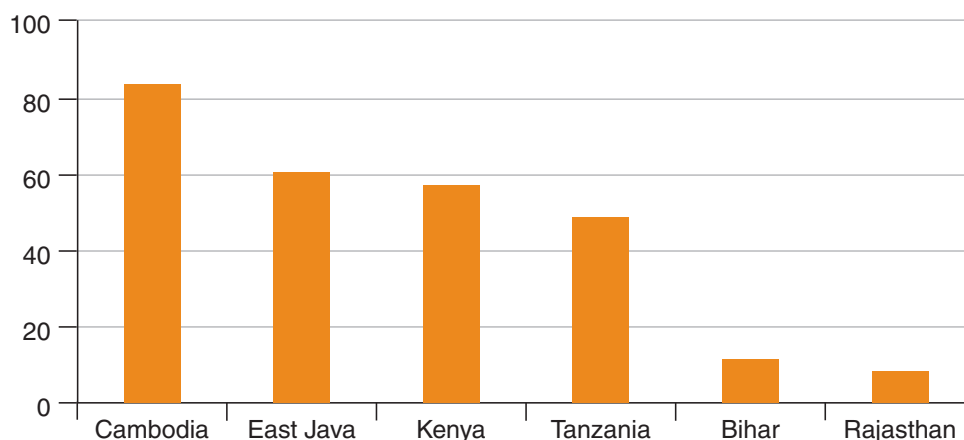
In some instances, conclusions were difficult to draw given the measurement of the factors. An example of this was found for knowledge (see Figure 9). Knowledge questions were not routinely administered in all surveys and when they were, questions did not always address the disease pathways or transmission routes, making robust conclusions difficult to draw. However, for many households, a reason to build or upgrade a latrine is “good health and hygiene,” and this is cited as a key advantage of owning a latrine. However, it is unclear what exactly respondents

meant or understood. Hygiene may be in reference to a latrine’s perceived cleanliness, rather than knowledge of the fecal–oral contamination pathways. It may also reflect more “top of the mind” reasons or social desirability. Thus, the importance of health and hygiene as a motivational concept (and what this actually means to latrine owners and open defecators) is inconclusive.

In other cases, findings were only addressed in a handful of countries, such as sanctions and enforcement, beliefs and attitudes, and values (see Box 7). Although these concepts were explored in study questionnaires, findings were not presented in reports, making it challenging to conclude the extent to which these concepts are consistent and relevant across countries. However, in the reports where these concepts were included, findings were similar.

In other cases, such as roles and decision-making, intention, and perceptions of latrine ownership as providing safety and security or convenience, there were differences between countries (Box 8). For roles and decision-making, for example, although the review found a tendency for the

FIGURE 9: RESPONDENTS CITING HEALTH OR HYGIENE AS A REASON TO BUILD LATRINES, BY STUDY (%)



Note: Graphs in this report are for illustrative purposes. Survey questions, target groups, and denominators may vary according to study.

BOX 7: THE INFLUENCE OF SANCTIONS AND ENFORCEMENT, BELIEFS AND ATTITUDES, AND VALUES ON RURAL SANITATION BEHAVIORS

Sanctions and Enforcement

In certain situations, sanitation behaviors may be influenced by law enforcement and other regulations as mentioned in Tanzania, and the three Indian states. For example,

- In Tanzania, there is pressure from district officials to replace latrines that are full.
- In Meghalaya, one of the main reasons for building a latrine is stringent village rules.
- In Bihar, latrine owners are more likely to agree that sanctions are in place and that there are rules and penalties to stop open defecation.

Beliefs and Attitudes

There exist a number of beliefs and attitudes toward open defecation that serve to deter the extent to which feces are perceived as harmful to the environment and the concept of human waste as a source of pollution, but only found as relevant in Bihar, East Java and Kenya. For example,

- In Bihar, farmers believe that feces are beneficial for farming, as it will increase fertility of the land and improve and increase crop production.
- In East Java, respondents discuss how open defecation into a river is not harmful, given there is the belief that fish eat their waste or that feces can serve as fertilizer.

These beliefs are more salient among open defecators, and may serve as psychological refuges that help to justify their behavior.

Values

Only a few of the reports cite the importance of values: Peru, East Java, and Tanzania. In these countries, latrine ownership is associated with a number of positive family values: being clean, being health conscious, and being good parents and welcoming hosts. For example:

- In Peru and East Java, having a sanitation facility at home represents modernity and progress.
- In Tanzania, “modernity” is the most common reason for households to improve existing latrine.

final decision to rest with the male head of the household, there is country and regional variance, which makes generalizing results challenging. For example, in Meghalaya, which is a matriarchal society, women have an important role in the decision-making process.

Convenience is highlighted as both a barrier and a motivator to adopting better sanitation practices. Although latrine owners cite convenience as an advantage to owning a latrine

(see Figure 10), open defecators describe their behavior as “easy” and practical. They report that if it is late at night or raining heavily, they use flying toilets so there is no need to leave their household compound. The notion of convenience may be related to a number of factors, such as whether or not there are open defecation sites allocated for this behavior, how much available space and privacy there is to defecate when one needs to, and the proximity of one’s homestead to others.

BOX 8: REGIONAL VARIATIONS REGARDING THE RELEVANCE OF DIFFERENT SANIFOAM FACTORS

Drivers: Perceptions that latrines provide safety and security

The concept of safety and security is both a motivator and a deterrent for improved sanitation, and there are differences between countries and regions in terms of where open-defecation behavior takes place and the type of latrine.

For example, as a motivator for latrine acquisition:

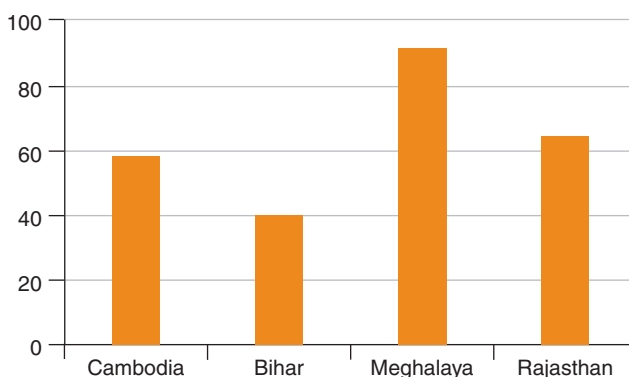
- There is fear of being dragged away by strong currents, especially for children, or that people can be bitten or attacked by wild animals. It is also perceived as dangerous when the ground is muddy.
- A main reason for building a latrine is “improved security for women and children,” as mentioned by 69 percent of latrine owners in Rajasthan, 63 percent in Bihar, and 50 percent in Meghalaya.

For example, as a barrier to latrine acquisition and use:

- In Kenya, households report that they are afraid to use the latrine because of the distance/proximity of the latrine to their house, and would rather use flying toilets at nighttime. There is a fear that people will be bitten or attacked by wild animals.
- Pit latrines are considered dangerous and in poor condition, especially after rains. Consequently, people report that they would prefer to defecate in the open rather than risk falling into a sinking hole or a latrine collapsing.

The notion of latrines as being unsafe is in relation to pit latrines. A key trigger to upgrading latrines is around the notion that “improved latrines” are durable and safe. Improved safety is also described as one of the most common reasons for improving an existing latrine. As such, the conflicting information regarding the role of safety in latrine adoption may be due to perceptions regarding the type of latrine being referenced by research participants.

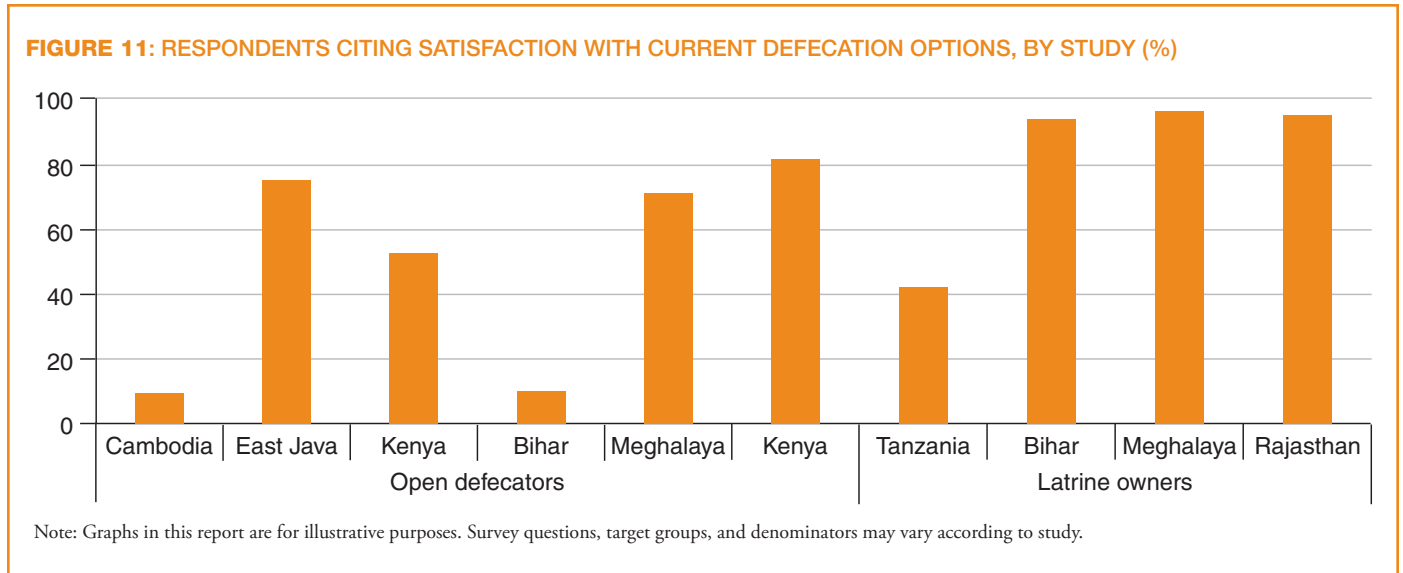
FIGURE 10: LATRINE-OWNING HOUSEHOLDS CITING CONVENIENCE AS A MAIN REASON TO BUILD A LATRINE (%)



Note: Graphs in this report are for illustrative purposes. Survey questions, target groups, and denominators may vary according to study.

Finally, some other concepts emerged from the review, including satisfaction. The assumption is that the greater the degree of dissatisfaction, the higher the likelihood that a respondent will move up the sanitation ladder. However, levels of satisfaction with current defecation practices vary by region and behavior group and suggest

that in some cases, open defecators may be happy enough with their current practices (see Figure 11). Therefore, the relationship between satisfaction and an individual’s position on the sanitation ladder is somewhat unclear, although owners of improved latrines are clearly the most satisfied.



VIII. Summary and Implications

This global review of formative research studies identifies a number of commonalities across countries and regions, as well as a number of emerging themes that positively and negatively influence sanitation behaviors. Although some differences are found across countries, in general themes coalesced around facets of opportunity, ability, and motivation. Findings suggest that a number of factors serve to promote positive sanitation behaviors. These factors include changing social norms, challenging perceptions of latrine affordability, fostering positive latrine attributes, and increasing consumer demand for latrines through emotional hooks, such as associating latrine use and ownership with improved social status. Ensuring that latrines are available and functioning will also serve as a precursor to use.

The relationship between behavior and other concepts, such as knowledge, sanctions, enforcement of rules or regulations, and values and attitudes, is less clear. This may be due to the different research objectives and questionnaires/guides of the studies, or it could reflect the actual relevancy of these factors to sanitation behaviors. At any rate, making robust conclusions regarding their influence on sanitation behaviors is more challenging.

A number of research recommendations emerged from this global review, given that it identifies a number of factors that resonate with sanitation behaviors. Most importantly, there are opportunities to conduct “lighter” and more tailored formative research. These are summarized here:

- Including the most important determinants identified in this review as a means to monitor program impact and assess the extent to which these factors may have changed over time. These determinants are access and availability to functioning latrines, sanitation products, and services; latrine product attributes; social norms around open defecation; perceptions of latrine affordability; competing priorities for other household items; and a number of emotional, social, and physical drivers. Addressing wealth and contextual factors will also be important, as well as self-efficacy in contexts where improved latrines are being constructed.
- Using more specific or less burdensome research methods. Depending on the program needs and objectives, other methods could be used to answer research questions that we know less about but are known to be important and specific to different study populations. For example,
 - street/village intercept surveys to address price perceptions and willingness to pay for latrines, or supply-side surveys to address actual product availability and pricing.
 - qualitative research to explore determinants of behavior when few people are actually “doing” the behavior. For example, if only 5 percent of a population is estimated to own an improved latrine, investigating reasons for improved latrine ownership in a quantitative survey would require a very large sample size.
- Using standardized research guidelines and approaches to ensure greater comparability between countries and target groups. This has also been noted as important in other sanitation behavior change frameworks, notably the RANAS model, which has underscored the need for standardized measurement of different theoretical factors through the use of single questions in a survey (Inauen et al. 2013). There are also opportunities for more specific behavioral questions to delve deeper into self-reported latrine use. Namely, respondents should be asked about their defecation behavior, and not what they think others in their households are doing. For example, specific behavioral questions may address whether or not respondents used a latrine the last time they defecated, as well as clarifying defecation practices that occur inside or outside the home (e.g., at work). This will also allow for further investigation of barriers regarding why people who own latrines may not use them. For additional guidance, refer to the “Study Design and Questionnaire Tips” document, available online in WSP’s Sanitation Marketing Toolkit (<http://wsp.org/toolkit/toolkit-home>).
- There may be value in conducting additional analysis on the primary data to allow for making more

robust conclusions and for exploring the importance of SaniFOAM factors relative to each other. Analysis could also consider making statistical comparisons between the different behavioral groups. The impact of wealth disparity could also be further investigated. In particular, understanding the specific barriers and drivers to improved sanitation among the rural poorest will help improve programmers' ability to design effective behavior change interventions, particularly as the sector moves toward more equity-focused goals in the post-MDG setting. Finally, the role of gender in decision-making should also be investigated. The findings presented in the quantitative research reports generally reflect male perceptions, given that the study respondents were usually male household heads or representatives. Future quantitative formative research studies should ensure that women are adequately represented in the sample. This will help to explore the role of gender and further facilitate an understanding of the factors that may influence sanitation behavior according to men and women.

- The “focus” component of the SaniFOAM framework ensures that program managers and implementers define the behavior to be changed and the target group prior to research studies or interventions, and this is noted as important in other sanitation frameworks (Mosler 2012). However, the SaniFOAM framework may also benefit from further clarification regarding the “focus” component, namely to acknowledge more contextual factors that are known to affect sanitation behaviors (see Figure 1). For example, perceptions of the physical environment such as available sources of water, level of the water table, pattern of precipitation, and available land space. These concepts have been suggested as an important component to address in sanitation behavior change frameworks (Dreibelbis et al. 2013).

Finally, to demonstrate how the results from this review can be utilized, Box 9 provides some thoughts regarding practical implications from this review.

BOX 9: EXAMPLES OF PRACTICAL IMPLICATIONS FROM THE REVIEW

- Open defecation is a common behavior and is sustained through local cultural norms. According to the SaniFOAM framework, it is a social norm that is traditional and practiced since childhood, and in some regions, such as in India and East Java, further fostered by designated sites allocated for open defecation. Although changing actual normal practice may be a long and slow process, a first step may be changing perceived norms. For example, regularly portraying latrine usage in mass media, in TV ads, or on entertainment shows can create the impression of normality. Campaigns should endeavor to give high visibility to latrine usage as a social norm by creating the illusion that “everyone’s doing it,” complementing efforts through Community-Led Total Sanitation (CLTS), and other triggering approaches.
- There is a clear association between one’s position on the sanitation ladder and socioeconomic status. Wealthier people are more likely to own and use improved latrines. However, many believe that latrines are too expensive to purchase and install. Improving knowledge around the actual cost of latrines and comparing the costs with other household items can serve to encourage latrine acquisition.
- Similarly, messages around the affordability of latrines should be coupled with descriptions about positive latrine attributes that stress that improved latrines are safe, durable, and hygienic. This can also help to encourage use and acquisition.
- Events such as a wedding or welcoming guests may raise the priority of a home latrine above other demands on household resources, and this can serve to promote latrine acquisition. As such, promoting latrine purchases or improvements prior to large annual holidays that involve visits from family members from other parts of the country, or other large social gatherings or ceremonies (such as religious festivals or weddings), may serve to promote latrine acquisition prior to these events. This could also be complemented with messaging that presents latrine-owning families as welcoming and good hosts.
- Not owning one’s house or land can also act as a disincentive to construct a latrine. In areas where renting is more common, landlords may be considered as a target population for promoting latrines. Demand-creation strategies could stress the value that latrine ownership could add to their property.
- Sociodemographic and other environmental characteristics, such as access to water, perceptions of soil quality, and seasonal and temporal factors, provide important contextual information for sanitation behaviors. Changing physical factors on a large scale, such as the availability of water, requires long-term sustained investment, which is typically beyond the ability of a sanitation campaign to deliver. However, given variations between countries and regions, these factors should be noted as a means to help tailor and target behavior change interventions.

References

- Andersen, R. M. 1995. "Revisiting the Behavioral Model and Access to Medical Care: Does It Matter?" *Journal of Health and Social Behavior* 36 (1): 1–10.
- Bandura, A. 1977. *Social Learning Theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Becker, M. H. 1990. "Theoretical Models of Adherence and Strategies for Improving Adherence." In *The Handbook of Health Behavior Change*, edited by A.A. Shumaker, 5–43. New York: Springer.
- Berkowitz, E. N., R. A. Kerin, S. W. Hartley, and W. Rudelius. 2000. *Marketing*, 6th edition. Boston: Irwin McGraw-Hill.
- Bettenhausen, K., and J. Murnighan. 1991. "The Development of an Intragroup Norm and the Effects of Interpersonal and Structural Challenges." *Administrative Science Quarterly* 36 (1): 20–35.
- Bicchieri, C. 2000. "Words and Deeds: A Focus Theory of Norms." *Rationality, Rules and Structure*, edited by J. Nida-Rumelin and W. Spohn, 153–184. UK: Kluwer Academic Publishers.
- Catania, J. A., S. M. Kegeles, and T. J. Coates. 1990. "Towards an Understanding of Risk Behavior: An AIDS Risk Reduction Model (ARRM)." *Health Education Quarterly* 17 (1): 53–72.
- Cole, G. E., D. Holtgrave, and N. Rios. 1993. "Systematic Development of Trans-theoretically Based Behavioral Risk Management Programs." *Risk: Issues in Health, Safety and Environment* 4 (1): 67–93.
- Conteh, L., and K. Hanson. 2003. "Methods for Studying Private Sector Supply of Public Health Products in Developing Countries: A Conceptual Framework and Review." *Social Science & Medicine* 57 (7): 1147–1161.
- Dreibelbis, R., P. J. Winch, E. Leontsini, K. R. S Hullah, P. K. Ram, L. U. Unicomb, and S. P. Luby. 2013. "The Integrated Behavioural Model for Water, Sanitation, and Hygiene: A Systematic Review of Behavioural Models and a Framework for Designing and Evaluating Behavior Change Interventions in Infrastructure-restricted Settings." *BMC Public Health* 13: 1015. <http://www.biomedcentral.com/1471-2458/13/1015>.
- Devine, J. 2009. "Introducing SaniFOAM: A Framework to Analyze Sanitation Behaviors to Design Effective Sanitation Programs." Working Paper. Washington, DC: Water and Sanitation Program, World Bank. http://www.wsp.org/sites/wsp.org/files/publications/GSP_sanifoam.pdf.
- Elster, J. 1989. *The Cement of Society: A Study of Social Order*. Cambridge, UK: Cambridge University Press.
- Fehr, E., and S. Gächter. 2000. "Fairness and Retaliation: The Economics of Reciprocity." *Journal of Economic Perspectives* 14 (3): 159–181.
- Fehr, E., and K. Schmidt. 1999. "A Theory of Fairness, Competition, and Cooperation." *Quarterly Journal of Economics* 114 (3): 817–868.
- Foreit, K. G., and J. R. Foreit. 2000. *Willingness to Pay Surveys for Setting Prices for Reproductive Health Products and Services: A User's Manual*. New York: Population Council. http://www.popcouncil.org/uploads/pdfs/frontiers/Capacity_Bldg/WTP_Manual.pdf.
- Hallahan, K. 2000. "Enhancing Motivation, Ability and Opportunity to Process Public Relations Messages." *Public Relations Review* 26 (4): 463–480.
- Inauen, J., M. M. Hossain, R. B. Johnston, and H.-J. Mosler. 2013. "Acceptance and Use of Eight Arsenic-Safe Drinking Water Options in Bangladesh," *PLOS One* 8 (1): e53640.
- Jenkins, M. W., and B. Scott. 2007. "Behavioral Indicators of Household Decision-Making and Demand for Sanitation and Potential Gains from Social Marketing in Ghana." *Social Science and Medicine* 64 (12): 2427–2442.
- Lindbeck, A., S. Nyberg, and J. W. Weibull. 1999. "Social Norms and Economic Incentives in the Welfare State." *Quarterly Journal of Economics* 114 (1): 1–35.

- MacInnis, D.J, C. Moorman, and B.J. Jaworski. 1991. "Enhancing and Measuring Consumer's Motivation, Opportunity, and Ability to Process Brand Information from Ads." *Journal of Marketing* 55: 32–53.
- Moorman, C., and E. Matulich. 1993. "A Model of Consumers' Preventive Health Behaviors: The Role of Health Motivation and Health Ability." *Journal of Consumer Research* 20 (2): 209–228.
- Moser, H.J. 2012. "A Systematic Approach to Behavior Change Interventions for the Water and Sanitation Sector in Developing Countries: A Conceptual Model, a Review, and a Guideline." *International Journal of Environmental Health Research* 22(5): 431–449; DOI:10.1080/09603123.2011.650156.
- PSI (Population Services International) Research Department. 2004. "PSI Behavior Change Framework 'Bubbles': Proposed Revision." Washington, DC: PSI. www.psi.org.
- Rogers, E. 2003. *Diffusion of Innovations*, 5th edition. New York: The Free Press.
- Rothschild, M. 1999. "Carrots, Sticks, and Promises: A Conceptual Framework for the Management of Public Health and Social Issue Behaviors." *Journal of Marketing* 63 (4): 24–37.
- Sunstein, C. R. 1996. "Social Norms and Social Roles." *Columbia Law Review* 96: 201–266.
- WHO/UNICEF Joint Monitoring Program. 2013. *Progress on Sanitation and Drinking Water*: 2013 update. New York: WHO/UNICEF.
- Wiggins, J. 2004. "Motivation, Ability and Opportunity to Participate: A Reconceptualization of the RAND Model of Audience Development." *International Journal of Arts Management* 7 (1): 22–33.
- WSP (Water and Sanitation Program), IFC (International Finance Corporation), and Ministry of Health, Kenya. 2013. "Kenya Onsite Sanitation: Market Intelligence." Nairobi, Kenya: Water and Sanitation Program, World Bank. <http://www.wsp.org/sites/wsp.org/files/publications/WSP-Kenya-Market-Intelligence-Brochure.pdf>.

Appendix

TABLE A: DETAILS OF THE FORMATIVE RESEARCH STUDIES

Country/Regions	Date	Surveyed Population	Methods*	Report Names
Cambodia: Kandal, Siem Reap, Svay Rien	2006	Latrine owners and nonowners	FGD (N = 6) SI (N = 939)	<i>Demand Assessment for Sanitary Latrines in Rural and Urban Areas of Cambodia</i> (2007) http://www.wsp.org/sites/wsp.org/files/userfiles/WSP-Demand-Assessment-Cambodia.pdf
India: Meghalaya (3 districts)	2012	Household heads (chief wage earners)	IDI (N = 18) FGD (N = 21) SI (N = 960)	<i>Consumer Research for Rural Sanitation in Meghalaya</i> (unpublished)
India: Rajasthan (11 districts)	2012	Chief wage earners from rural areas	IDI & FGD (N = 56) SI (N = 3,301)	<i>Understanding Open Defecators Perceptions and Motivations to Toilet Usage and Communication Strategy to Handle Open Defecation in the State of Rajasthan</i> (unpublished)
India: Bihar (13 districts)	2012	Chief wage earners	IDI & FGD (N = 45) SI (N = 3,971)	<i>Consumer Research for Understanding Rural Sanitation, Bihar</i> (unpublished) <i>Qualitative Report for Understanding Rural Sanitation, Bihar</i> (unpublished)
Indonesia: East Java	2008	Male and female heads of household, from rural and semi-urban areas	FGD (N = 6) IDI (N = 6) SI (N = 2,009)	<i>Total Sanitation and Sanitation Marketing Research Report</i> (2009) http://www.wsp.org/sites/wsp.org/files/userfiles/WSP-Sanitation-Marketing-Nielsen-Report-Indonesia.pdf
Kenya: Wangige, Naivasha, Karatina, Kitui, Garissa, Bungoma, Ahero, Kilifi	2012	Household adults who are decision-makers or involved in the purchase of household items, from rural or semi-urban areas	FGD (N = 16) SI (N = 2,000)	<i>World Bank Formative Research Qualitative and Quantitative Report, 2012</i> (unpublished)
Malawi: Dowa, Mangochi, Nkhata Bay	2011	Household heads, suppliers, and government representatives	IDI (N = 35) FGD (N = 15+) SI (N = 222)	<i>A Market Assessment of Rural Sanitation in Malawi: Demand, Supply and the Enabling Environment for Sanitation in Dowa, Mangochi and Nkhata Bay</i> (unpublished)
Peru: Callao, Cajamarca, An-cash, and Loreto	2007	Household heads and mothers with no latrines, unimproved latrines, and improved latrines, from rural or semi-urban areas	FGD (N = 24)	<i>Qualitative Report: Water and Sanitation Program Alternative Sanitation Solutions</i> (unpublished)
Tanzania: Musoma, Kiteto, Rufiji, Iringa, and Sumbawanga	2008	Household heads, suppliers, government representatives	SI (N = 1,000 households and N = 200 local service providers)	<i>Market Research Assessment in Rural Tanzania for New Approaches to Scale Up Sanitation Demand and Supply</i> (2009) http://www.wsp.org/sites/wsp.org/files/publications/TZ_TSSM_Research_Report.pdf
Uganda: Tororo District	2009	Household heads, adopters and nonadopters of latrines.	IDI (N = 30)	<i>In-depth Consumer Assessment Report for Sanitation Marketing Piloting in Tororo District, Uganda</i> (2009) http://pdf.usaid.gov/pdf_docs/Pnadw563.pdf

*SI: Structured interviews; FGD: Focus group discussion; IDI: In-depth interview

